

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 11, line 15, as follows:

Donors. Representative donor structures are illustrated in, for example, ~~FIGURES 1-3~~ FIGURES 1A, 2A, 3, 8, 15, 27, 36, 37, and 48 and described below. The donor can be an amino donor that includes an amino group.

Please amend the paragraph beginning on page 13, line 1, as follows:

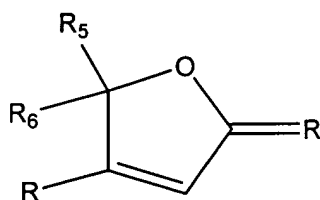
Acceptors. Representative acceptor structures are illustrated in ~~FIGURES 1, 2~~ FIGURES 1E, 2A, 2B, 11, 15-17, 19, 20, 22, and 28-32 and described below. In certain embodiments, the acceptor includes a cyanofuran group.

Please amend the paragraph beginning on page 14, line 9, as follows:

Bridges. Representative bridge structures are illustrated in ~~FIGURES 1, 2, FIGURES 1B, 1C, 1D, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, and 2I,~~ 4-7, 10, 13, 15, 17, 22, 26, and 28-32 described below. The bridge structure is a π -electron conjugated bridge. The bridge can include a variety of groups including, for example, a dihydrofuran group, a fused dithiophene group, a fused trithiophene group, a dithiophene group, and a substituted versions of these groups. As with the donor and acceptor groups noted above, substituted bridges can include functionalized substituents for coupling to dendron or for crosslinking.

Please amend the paragraph beginning on pages 14, line 19, as follows:

In one embodiment, the π -electron conjugated bridge includes a dihydrofuran group having the structure:

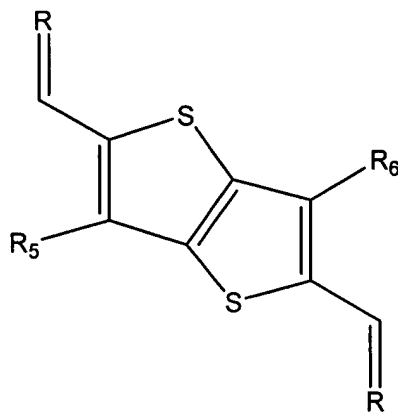


wherein R_5 and R_6 are selected from alkyl and silyl groups, for example, t-butyldimethyl silyl and perfluoropropyldimethyl silyl groups, and R represents a functional group capable of forming a covalent bond with the donor and acceptor portions of the chromophore, or when the donor is incorporated into a chromophore, R represents the rest of the chromophore. Chromophores that include the bridge are illustrated in ~~FIGURE 1~~ FIGURES 2A, 2B, and 2C.

Please amend the paragraph beginning on pages 15, line 3, as follows:

In another embodiment, the π -electron conjugated bridge includes a fused dithiophene group having the structure:

wherein R_5 and R_6 are, for example, alkyl or silyl groups, such as t-butyldimethyl silyl

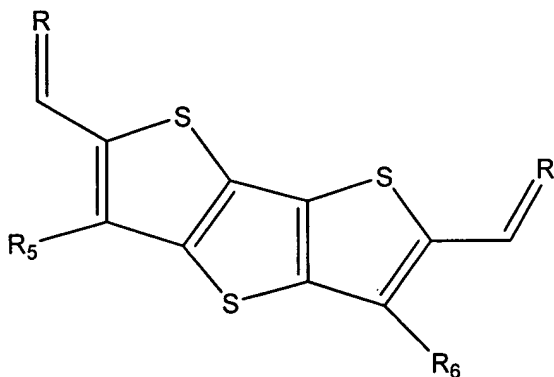


and perfluoropropyldimethyl silyl groups, and R represents a functional group capable of forming a covalent bond with the donor and acceptor portions of the chromophore, or when the donor is incorporated into a chromophore, R represents the rest of the chromophore. A synthetic scheme for the preparation of this class of bridge is presented in FIGURE 4. A synthetic scheme

for the preparation of a representative embodiment of this bridge is provided in Example 1. Chromophores that include the bridge are illustrated in FIGURES 2D, 2E, 12, 14, 21, and 26.

Please amend the paragraph beginning on pages 15, line 24, as follows:

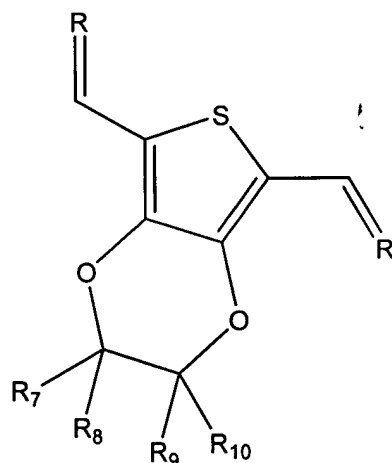
In a further embodiment, the π -electron conjugated bridge includes a fused trithiophene group having the structure:



wherein R₅ and R₆ are, for example, alkyl or silyl groups selected from t-butyl dimethyl silyl and perfluoropropyl dimethyl silyl groups, and R represents a functional group capable of forming a covalent bond with the donor and acceptor portions of the chromophore, or when the donor is incorporated into a chromophore, R represents the rest of the chromophore. A synthetic scheme for the preparation of this class of bridge is presented in FIGURE 5. Chromophores that include the bridge are illustrated in ~~FIGURE 2~~ FIGURES 2F and 2G.

Please amend the paragraph beginning on pages 16, line 21, as follows:

In still another embodiment, the π -electron conjugated bridge includes a substituted thiophene group having the structure:

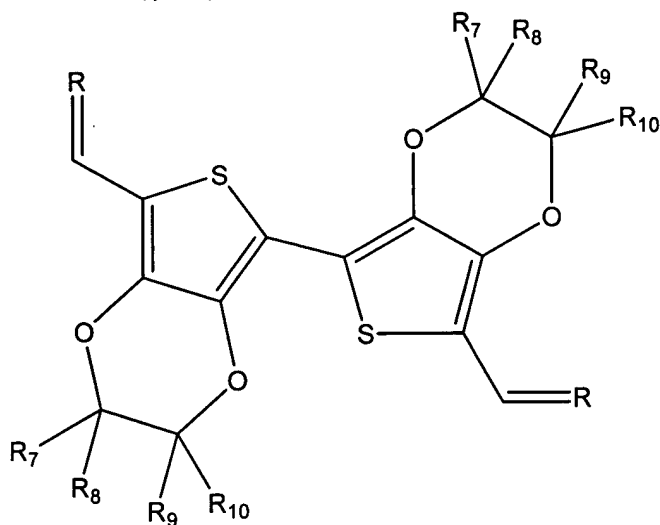


wherein R₇, R₈, R₉, and R₁₀ are hydrogen or alkyl groups, or wherein R₇, R₈, R₉, and R₁₀ are fluorine, or wherein R₇, R₈, and R₉ are fluorine and R₁₀ is a trifluoromethyl group; and R represents a functional group capable of forming a covalent bond with the donor and acceptor portions of the chromophore, or when the donor is incorporated into a chromophore, R represents the rest of the chromophore. A synthetic scheme for the preparation of this class of bridge is presented in FIGURE 6. A synthetic scheme for the preparation of a representative embodiment of this bridge is provided in Example 2. Chromophores that include the bridge are illustrated in FIGURES [[2]], 8, and 14.

Please amend the paragraph beginning on pages 17, line 8, as follows:

In yet another embodiment, the π -electron conjugated bridge includes a dithiophene group having the structure:

wherein R₇, R₈, R₉, and R₁₀ are hydrogen or alkyl groups, or wherein R₇, R₈, R₉, and



R₁₀ are fluorine, or wherein R₇, R₈, and R₉ are fluorine and R₁₀ is a trifluoromethyl group; and R represents a functional group capable of forming a covalent bond with the donor and acceptor portions of the chromophore, or when the donor is incorporated into a chromophore, R represents the rest of the chromophore. A synthetic scheme for the preparation of this class of bridge is presented in FIGURE 7. Chromophores that include the bridge are illustrated in ~~FIGURE 2~~ FIGURES 2H and 2I.

Please amend the paragraph beginning on page 5, line 9, as follows:

~~FIGURE 1 is an illustration of representative donors, bridges, and acceptors of the present invention;~~

FIGURE 1A illustrates the structures of two representative donor groups useful in the chromophores of the invention;

FIGURE 1B illustrates the structures of three representative bridge groups useful in the chromophores of the invention;

FIGURE 1C illustrates the structures of three representative bridge groups useful in the chromophores of the invention;

FIGURE 1D illustrates the structure of three representative bridge groups useful in the chromophores of the invention;

FIGURE 1E illustrates the structures of five representative acceptor groups useful in the chromophores of the invention;

Please amend the paragraph beginning on page 5, line 11, as follows:

~~FIGURE 2 is an illustration of representative chromophores of the present invention;~~

FIGURE 2A illustrates the structure of a representative chromophore of the invention;

FIGURE 2B illustrates the structure of a representative chromophore of the invention;

FIGURE 2C illustrates the structure of a representative chromophore of the invention;

FIGURE 2D illustrates the structure of a representative chromophore of the invention;

FIGURE 2E illustrates the structure of a representative chromophore of the invention;

FIGURE 2F illustrates the structure of a representative chromophore of the invention;

FIGURE 2G illustrates the structure of a representative chromophore of the invention;

FIGURE 2H illustrates the structure of a representative chromophore of the invention;

FIGURE 2I illustrates the structure of a representative chromophore of the invention;

Please amend the paragraph beginning on page 7, line 10 as follows:

FIGURE 28 is a synthetic scheme for the preparation of a representative dendrimer functionalized thiophene-bridged chromophore of the invention;

Please amend the paragraph beginning on page 7, line 12, as follows:

FIGURE 29 is a synthetic scheme for the preparation of a representative crosslinkable dendrimer functionalized chromophore of the invention;

Please amend the paragraph beginning on page 7, line 14, as follows:

FIGURE 30 is a synthetic scheme for the preparation of a representative crosslinkable dendrimer functionalized chromophore of the invention;

Please amend the paragraph beginning on page 7, line 16, as follows:

FIGURE 31 is a synthetic scheme for the preparation of a representative crosslinkable dendrimer functionalized chromophore of the invention;

Please amend the paragraph beginning on page 7, line 18, as follows:

FIGURE 32 is a synthetic scheme for the preparation of a representative crosslinkable dendrimer functionalized chromophore of the invention;

Please amend the paragraph beginning on page 7, line 26, as follows:

FIGURE 36 is a synthetic scheme for the preparation of an amine ~~acceptor~~ donor useful in the preparation of dendrimer functionalized chromophores of the invention;

Please amend the paragraph beginning on page 7, line 28, as follows:

FIGURE 37 is a synthetic scheme for the preparation of an amine ~~acceptor~~ donor useful in the preparation of dendrimer functionalized chromophores of the invention;

Please amend the paragraph beginning on page 8, line 3, as follows:

FIGURE 39 is a synthetic scheme for the preparation of an amine ~~acceptor-thiophene~~ donor-thiophene bridge useful in the preparation of chromophores of the invention;

Please amend the paragraph beginning on page 8, line 5, as follows:

FIGURE 40 is a synthetic scheme for the preparation of an amine ~~acceptor-thiophene~~
donor-thiophene bridge useful in the preparation of chromophores of the invention.

Please delete the previous version of the abstract of the disclosure. A substitute abstract is appended hereto as a separate page.

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